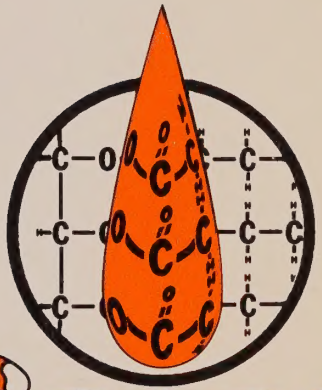
Fats and oils in Canada; annual review 1980



Fats & Oils in Canada

ANNUAL REVIEW 1980

DEPARTMENT OF INDUSTRY, TRADE AND COMMERCE

FATS AND OILS IN CANADA
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CHAPTER I

THE POS PILOT PLANT IN SASKATOON; A UNIQUE AND FAR-SIGHTED APPROACH TO TECHNOLOGY DEVELOPMENT FOR THE FOOD AND AGRICULTURAL INDUSTRIES

By

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The food industry, both in Canada and elsewhere, is historically an industry in which technology has not played a major role. The past decade has, however, seen an increase in the importance attached to technology in the general fields of food and agriculture, and it is now clear that the role of technology in these industries will become progressively more prominent during the remainder of the 20th Century. The reason for this is two-fold; firstly, the economies of the developed Western nations are in a period of flux at present, and many companies will find it difficult to survive without significant new products and new markets, the new products can only come from a greater reliance on technology. It should also be born in mind that a number of companies are using technology which is basically obsolete, and require updating of their process technology to remain competitive. Secondly, we inhabit a world whose population is increasing alarmingly, and world food demand will very shortly exceed supply, particularly with respect to protein, unless positive action is taken to remedy this situation. A consequence of this is a shift in agricultural practices which has become apparent during the past thirty years, namely the shift to intensive animal husbandry, releasing more land for arable purposes. This change, of course, allows us to exploit our agricultural resources more effectively, but in turn increases the demand for technology, both with respect to poultry and livestock feeds, and to human food.

These and other considerations, reinforced by the results of studies performed by the Federal Government's Grains Group in the early 1970's, pointed to the need for filling the technological gap between the producers of agricultural raw materials and the manufactures of finished food products. It was appreciated that the facilities necessary for filling this gap were costly, and beyond the financial reach of many companies. At the same time, larger companies, with the necessary financial strength to fill the gap themselves, were understandably reluctant to invest in a range of pilot plant equipment other than that which was required for their own specific projects and which would give a realistic return on investment.

POS was, therefore, founded as a joint Government (Federal and Provincial) - Industry venture in the shape of a not-for-profit Corporation dedicated to the development of new or improved methods for processing cereals, oilseeds and legumes in the first instance, but the the inherent flexibility and creativity for handling other materials as required. In fact, POS stands for PROTEIN-OIL-STARCH, and if we read "carbohydrate" for "starch" then it can be seen that POS is able to deal with all major nutrients found in food raw materials as well as with many other constituents. The establishment of POS was announced in 1973, and the Corporation became operational in 1977.

Not only was the concept novel, but the structure of the Corporation was unique in that industry, through a membership scheme, was given control of the Board of Directors, even though the Federal Government guaranteed 90 per cent of the capital costs and has continued to contribute substantially to operating deficits.

The Corporation has now been operational for four years and it therefore seems appropriate at this time to reflect upon the present situation, past achievements and future prospects of this unusual research institute. The present situation can best be illustrated by reference to the mandate of POS, which is to foster the development of new or improved technology for the production of ingredients from agricultural raw materials. A major part of the activity at POS is in fact devoted to technology for separating legumes, oilseeds and cereals into proteins, oil and starch, but the capabilities of POS can also extend to such diverse areas as conversion of damaged vegetables and fruit to stable powders, recovery of protein from carcass residues and processing of feed-stock for fermentation; there are also finished product capabilities in some areas such as pet-foods, snack type products and milk substitutes.

The mandate of POS is fulfilled in two ways; firstly, confidential projects are undertaken for clients, and secondly, the Corporation also has an in-house research programme. In general, clients means "companies", but the term also covers Government departments, universities and individuals; in short, anyone who has a need for new processes or products. For projects commissioned by these clients, POS provides a wide range of pilot scale processing equipment for development of value-added food and feed process technology. Though the heart of the operation is the modern pilot plant, there are fully-equipped laboratories for supporting the pilot plant activities, as well as an Information Service. The staff offers a range of scientific and technological expertise relevant to all activities. Clients may bring their own operational staff if they so desire, or POS will perform the work on their behalf. Likewise, clients may supply analytical support staff, or POS can provide services through their own fully-equipped laboratories. All projects undertaken for clients are confidential and all rights arising from such projects are vested in the client.

The service provided by POS depends on the exact requirements, but can include any or all of experimental planning and design, preliminary laboratory studies, pilot plant development, full analytical data, production of test market quantities, detailed project documentation, and commercial flowsheet recommendations. The $7,000,000 POS facility and the relevant expertise are immediately available as an extension to the capabilities of the client, on a fee-for-service basis, with no capital outlay. POS furthermore offers a unique opportunity for "hands-on" training of operational and analytical personnel in all major aspects of agricultural material processing.

The presence under one roof of the wide range of equipment and the experts necessary for process development clearly offers advantages with respect to speed and the chances of success; the probability that a suitable process will be developed is greater than if the client attempts the development in his own premises, and results will generally be obtained more rapidly.

All facilities and services of POS are available to both Corporation Members and non-member clients. Membership is open, at modest entrance and annual fees, to Canadian industries, Federal and Provincial governments, universities and trade associations, and it confers a number of advantages, including access to the in-house research programme, information services, and a reduction in fees for commissioned projects. Though membership as such is restricted to Canadian organizations, there is no geographical limitation on use by non-member clients.

Experience to date has confirmed that, in the contract research area, POS meets a real need in the Canadian scene. In fact, a survey of companies who had commissioned projects during the first four years of the operation revealed that benefits were already evident to the tune of several million dollars per year in terms of increased turnover by the organizations concerned, and indicated that the benefits would reach a level of some tens of millions of dollars annually within a few years. All those approached in this survey responded enthusiastically, and many viewed the contribution made by POS to success as having been crucial to the success of the project concerned.

Though this survey indicated clearly and unequivocally that POS had far exceeded the original expectations in terms of benefit to the Canadian economy, some disappointing facts have also emerged. Firstly, the facility has not been used by clients to the extent originally anticipated, and secondly, membership has lagged behind the initial expectation. The under-utilization of the facilities can be attributed in part to a degree of conservatism amongst many of the companies which should be developing new technology to meet future requirements, as well as to a relative lack of awareness of POS capabilities. Both these situations will change during the next

few years; the wind of economic change which is now beginning to make itself felt in Canadian industry will force many companies to seek new products, processes and markets if they are to survive, and they will need the assistance of an organization such as POS. It is, however, important that when the need is perceived, awareness of POS has also been created, and the marketing of POS services is an important element in the future performance of the Corporation.

A dynamic and growing membership is also a prerequisite for optimal performance of the Corporation, not only because membership fees help to meet operating costs, but also because a growing membership is visible evidence of belief in the role which POS can play during the coming years and justifies continued Government support for the facility.

In order to make membership more attractive, the Corporation recently changed its policy with respect to in-house research. Originally, the in-house research programme was based on suggestions by members, and results of completed projects were issued impartially to all members. Clearly, no member would suggest a project with commercial implications since the results would automatically have been distributed to his competitors within the membership. It was, therefore, decided that the initiative with regard to future in-house projects would come from within POS, and that the in-house research programme would be re-orientated in the direction of commercially-viable process/product development, with selection of projects based to a considerable extent on forecasts of future needs in the Canadian bio-resources industries. Patents which arose would be made available firstly to members for exploitation and would only be offered for licence outside the membership if no members exercised their rights. In effect, this change gives members a chance of exclusive exploitation of a commercially-viable POS invention rather than a guarantee of non-exclusivity for an academic finding. In-house research results of academic rather than commercial value will of course continue to be issued to members as in the past.

The first result of this change in policy has been a novel pet-food formulation with "dog appeal", which could capture a large slice of the North American pet food market for the successful member. Further inventions in the pipe-line relate to health care diets, and a novel approach to oilseed processing, which may revolutionize the oilseed industry in terms of energy efficiency and quality of products.

What does the future hold in store for POS? A long-range plan at present under construction identifies a number of areas, not completely unconnected, which are of major significance in the future of POS:

a) Evolution and growth of POS.
b) Forecasts of medium and long-term needs in the Canadian bio-resources industries.
c) Future funding of POS activities.

If POS is to contribute optimally to the Canadian agriculture and food industries during the coming years, it will also have to adapt to the changing circumstances. In the "contract research" area, for example, it is anticipated that the existing service in the development of process technology will be supplemented by services in equipment design and control technology, and that considerable attention will be paid to biotechnology. At the same time, considerable investment in process equipment will be required if POS is to remain in the forefront of process technology research and development. An increase of 30 - 50 per cent in staff during the coming five years will also be essential.

Forecasting future needs in Canadian industry is rather more difficult. It seems clear, however, that there will shortly be renewed interest in plant protein and that advances in biotechnology will give rise to new requirements for component separation and enrichment, relating both to processing of feed-stock and up-grading of fermentation residues. In the oilseed area it seems that the time is rapidly approaching for a serious look at the shortcomings of existing technology for the extraction of oil from a variety of oilseeds.

Topics, therefore, which POS can legitimately expect to study during the coming years, both on behalf of clients and as part of the in-house programme, include the preparation of fully-functional proteins from a wide variety of materials, new techniques for dry and wet-milling of cereals and legumes with a view to improved component separation, and use of alternative solvents for extraction of oil from oilseeds. In the case of this latter topic, work is already in progress, and there are indications that a new approach will enable establishment of a process which improves both oil and meal quality, as well has having energy requirements substantially lower than existing processes.

Distinct from the contract and in-house research areas, it also seems that POS should play a role in expanding the horizons of persons employed in the industry: graduating engineers, technicians and technologists could acquire "hands-on" experience with equipment and processes on a pilot scale; experienced persons could learn new techniques or learn the operation of a new process. This programme could be in collaboration with one or more universities. The increased requirement for technology in the industry during the coming decade will require diversification of personnel now in the industry, as well as additional training of new graduates entering the industry, training which our existing educational programme cannot provide.

Though it was originally assumed that POS could become financially self-supporting within a few years, it is now apparent that this will not be the case, and in fact, institutes like POS can only become self-supporting with great difficulty and after a long period of time. For our future well-being, however, it is essential that we have continued access to R & D, particularly for technology development, and institutes such as POS must not only survive, they must also grow. In effect, they provide a service which must be supported by the community as a whole. In the case of POS, the service is supported by the community, in the form of direct Government grants-in-aid, membership fees (both industrial and provincial) and utilization revenues for commissioned projects. The benefits resulting from access to POS facilities are clear, and since the community as a whole pays for it, there should be no reluctance on the part of industry to use this unique research establishment.

CHAPTER 2

WORLD PRODUCTION OF OILSEEDS, PROTEIN MEALS, FATS AND OILS

World Production

Oilseed production as reported by the U.S.D.A. declined by 7 per cent in 1980/81. Major decreases were recorded for soybean and sunflowerseed, due to drought in the U.S. Copra and palm kernel production increased slightly.

Protein meal production declined by 9 per cent in 1980/81, reflecting smaller crops of soybean and sunflowerseed and soft demand.

With regard to oils and fats, production in 1980/81 was off by about 3 per cent, with the largest decreases shown in soybean oil, sunflowerseed oil, and linseed oil production.

Oilseed Production, By Main Producers

Soybean production decreased by 22 per cent in the U.S. in 1980; other producing countries showed increases, and total production was down by 13 per cent. Cottonseed and rapeseed production increased slightly in 1980, while peanuts, sunflowerseed and flaxseed declined. In general, U.S. and Canadian oilseed crops showed decreases, while in most other countries, production increased due to increased areas planted to oilseeds.

Oilseeds, Oils and Fats Trade, 1977-81

A review of the recent five year trade in oils and fats shows a steady uptrend in the volume of edible vegetable oils traded (either as oil or in seed form). Industrial oils have not increased, probably due to price competition from edible oils such as soybean. Animal fats, particularly tallow, have increased while marine oils do not show a trend. Overall, the volume of oils and fats which will be traded in 1981, as forecast by the U.S.D.A., is up 24 per cent over 1977 but only marginally over 1980.

Table 1

WORLD PRODUCTION[1/]

OILSEEDS-PROTEIN MEALS-FATS/OILS

(in Thousand Tonnes)

OILSEEDS	1976/77	1977/78	1978/79	1979/80[2/]	1980/81[3/]
Soybeans	59 288	72 021	77 225	93 371	81 774
Cottonseed	22 244	24 926	23 897	25 197	26 065
Peanuts	17 264	17 112	18 148	17 682	17 188
Sunflowerseed	10 060	12 890	12 770	15 242	12 708
Rapeseed	7 357	7 918	10 703	10 180	11 118
Sesameseed	1 677	1 735	1 819	1 767	1 921
Safflowerseed	704	849	1 046	1 116	815
Flaxseed	2 227	2 954	2 437	2 667	2 363
Castor Beans	672	789	902	908	875
Copra	4 870	4 941	4 404	4 706	5 049
Palm Kernels	1 162	1 208	1 338	1 382	1 441
TOTAL	127 525	147 343	154 689	174 218	161 317
PROTEIN MEALS[4/]					
Soybean	40 627	49 689	53 538	65 470	56 738
Cottonseed	7 993	9 077	8 616	9 198	9 414
Peanut	3 831	3 776	4 059	3 794	3 810
Sunflower	3 438	4 411	4 371	5 205	4 368
Rapeseed	3 872	4 153	5 605	5 343	5 837
Sesameseed	619	647	682	661	721
Safflowerseed	433	519	641	683	501
Linseed	1 266	1 680	1 379	1 511	1 339
Copra	1 704	1 729	1 541	1 647	1 767
Palm Kernel	593	616	682	705	735
Fish	4 425	4 780	4 887	4 621	4 625
TOTAL	68 801	81 077	86 001	98 838	89 855

FATS & OILS[4/]	1976/77	1977/78	1978/79	1979/80[2/]	1980/81[3/]
EDIBLE VEGETABLE					
Soybean	8 838	10 834	11 681	14 341	12 397
Cottonseed	2 786	3 171	3 002	3 215	3 277
Peanut	3 192	3 147	3 382	3 162	3 175
Sunflowerseed	3 737	4 724	4 663	5 521	4 592
Rapeseed	2 485	2 699	3 662	3 465	3 781
Sesameseed	598	624	658	638	695
Safflowerseed	217	264	324	346	251
Olive	1 334	1 620	1 554	1 383	1 789
Corn	410	436	445	470	470
Coconut	3 117	3 162	2 819	3 012	3 231
Palm Kernel	546	568	629	650	677
Palm	3 371	3 591	4 085	4 552	4 947
Babassu	132	143	151	150	150
TOTAL	30 763	34 983	37 055	40 905	39 432
INDUSTRIAL					
Linseed	684	907	745	816	723
Castor	287	337	386	388	374
Olive Residue	153	171	142	144	169
Oiticica	14	14	14	14	14
Tung	100	95	101	100	90
TOTAL	1 238	1 524	1 388	1 462	1 370
MARINE OILS					
Fish	1 004	1 216	1 268	1 135	1 145
Whale	15	8	10	10	10
Sperm Whale	64	58	58	58	58
TOTAL	1 083	1 282	1 336	1 203	1 213

ANIMAL FATS	1976/77	1977/78	1978/79	1979/80	1980/81
Butter (fat content)	4 944	4 930	4 950	4 957	4 957
Lard	3 571	3 703	3 876	4 012	3 956
Tallow and Grease	5 815	5 800	5 600	5 550	5 550
TOTAL	14 330	14 433	14 426	14 519	14 463
TOTAL (FATS & OILS)	47 414	52 222	54 205	58 089	56 478

1/ Split year includes Northern Hemisphere crops harvested in the late months of the first year shown combined with Southern Hemisphere and certain Northern Hemisphere crops harvested in the early months of the following year. Animal, marine, and palm products are calendar year estimates for the second year shown.

2/ Preliminary.

3/ Forecast.

4/ Oilseed meal and oil production calculated from assumed extraction rates applied to that portion of each crop available for crushing and/or export representing potential not actual production.

Source: United States Department of Agriculture
FOP 3-81.

Table 2

PRODUCTION OF MAJOR OILSEEDS, BY MAIN PRODUCERS, IN THOUSANDS OF TONNES [1/]

	Average 1974/75-1978/79	1979/80 [2/]	1980/81 [3/]
SOYBEANS:			
United States	41 820	61 714	48 301
Brazil	10 660	15 000	15 200
China, Mainland	8 820	8 300	8 700
Argentina	1 796	3 400	3 900
Paraguay	332	600	700
Other	3 818	4 989	4 843
TOTAL	67 246	94 003	81 644
COTTONSEED:			
Soviet Union	4 669	4 510	5 300
China, Mainland	4 491	4 414	4 800
United States	3 926	5 240	3 894
India	2 450	2 643	2 700
Pakistan	1 024	1 380	1 320
Other	7 092	6 801	7 040
TOTAL	23 652	24 988	25 054
PEANUTS: (IN SHELL)			
India	5 921	5 772	6 000
China, Mainland	2 538	2 822	3 200
United States	1 723	1 805	1 042
Senegal	1 064	600	500
Sudan	890	850	800
Brazil	416	500	410
South Africa	227	330	300
Other	5 002	4 998	5 156
TOTAL	17 781	17 677	17 408
SUNFLOWERSEED:			
Soviet Union	5 658	5 414	4 500
Argentina	1 149	1 505	1 350
United States	889	3 484	1 988
Romania	766	889	750
Bulgaria	390	415	415
Other	2 418	3 556	3 829
TOTAL	11 270	15 263	12 832

	Average 1974/75-1978/79	1979/80 2/	1980/81 3/
RAPESEED:			
India	1 853	1 650	2 000
China, Mainland	1 601	2 402	2 350
Canada	1 854	3 411	2 506
Poland	726	233	564
France	545	510	1 140
Other	2 013	2 191	2 511
TOTAL	8 592	10 397	11 097
FLAXSEED:			
India	524	270	525
Argentina	599	743	620
Soviet Union	323	250	250
Canada	460	815	465
United States	320	344	202
Other	246	284	297
TOTAL	2 472	2 706	2 359
TOTAL (ABOVE CROPS)	131 013	165 034	150 394

1/ Split year includes Northern Hemishpere crop harvested in the late months of the first year shown combined with Southern Hemisphere and certain Northern Hemisphere crops harvested in the early months of the following year.

2/ Preliminary.

3/ Forecast.

Source: USDA FOP-27-80

Table 3

WORLD OILSEEDS, OILS & FATS TRADE, 1977-81

IN THOUSANDS OF TONNES [1/]

	1977	1978	Preliminary 1979	Forecast 1980	Forecast 1981
WORLD					
EDIBLE VEG. OILS					
Cottonseed	409	415	372	410	410
Peanut	900	690	741	780	711
Soybean	4 825	5 668	6 105	6 725	6 950
Sunflower	892	1 316	1 236	1 425	1 115
Rapeseed	960	937	1 252	1 250	1 100
Sesame	95	90	95	100	108
Safflower	13	20	19	25	18
Olive [2/]	103	137	129	125	150
Corn	97	102	118	150	122
Coconut	1 433	1 583	1 234	1 400	1 550
Palm Kernel	319	310	380	420	450
Palm	2 059	2 059	2 411	2 750	3 000
Babassu	4	9	5	5	5
TOTAL	12 035	13 336	14 097	15 565	15 689
INDUSTRIAL OILS					
Linseed	366	501	381	390	375
Castor	186	221	238	210	225
Oiticica	2	10	5	5	5
Tung	36	35	38	40	30
TOTAL	590	767	662	645	635
ANIMAL FATS					
Butter (Fat con.)	805	764	956	881	863
Lard	575	534	524	520	520
Tallow and Greases [3/]	2 313	2 263	2 357	2 535	2 535
TOTAL	3 693	3 561	3 837	3 936	3 918

	1977	1978	Preliminary 1979	Forecast 1980	Forecast 1981
MARINE OILS					
Whale	11	5	7	5	5
Sperm Whale	18	16	13	12	10
Fish (Inc. Liver)	545	644	726	650	650
TOTAL	574	665	746	667	665
WORLD TOTAL	16 892	18 329	19 342	20 813	20 907

1/ Exports from producing countries. Includes oil equivalent of seed exports.

2/ Net exports from Mediterranean basin.

3/ Includes edible and inedible tallow and grease. Excludes animal oils

Source: USDA FOP-27-80

CHAPTER 3

CANADIAN OILSEED PRODUCTION, PROCESSING AND TRADE IN FATS AND OILS

Canadian Oilseeds: Area, Yield, Production

Production of oilseeds in 1980 was down sharply for oilseeds grown in Western Canada, due to reduced plantings and drought. Soybeans, grown mainly in Ontario, increased slightly due to slightly higher yields in 1980.

Oilseed Processing

Data is available for Canola/rapeseed and soybean processing only. In both cases, the volume crushed increased to record levels in crop year 1979/80, due to expanded capacity.

Fats and Oils Trade

The major part of Canada's trade in fats and oils is comprised of edible vegetable oils. Imports of these oils in 1980 amounted to 100 235 tonnes, down 9 per cent from 1979. Exports increased sharply to 189 516 tonnes in 1980 versus 137 277 tonnes the previous year. The net trade balance in 1980 was 89 281 tonnes in favour of exports.

Table 4

CANADIAN OILSEEDS: AREA, YIELD, PRODUCTION

	1976	1977	1978	1979	1980	1976	1977	1978	1979	1980
	(Thousands of Hectares)					(Yield Per Hectare, Kilograms)				
Flaxseed	324	596	518	927	575	857	1 091	1 040	902	808
Rapeseed	720	1 453	2 806	3 439	2 080	1 165	1 359	1 201	1 035	1 205
Soybeans	153	202	263	283	283	1 628	2 546	1 802	2 373	2 520
Mustardseed	22	74	98	62	99	983	1 058	1 036	860	985
Sunflowerseed	20	68	87	164	136	1 166	1 167	1 290	1 347	1 221

	Production (Tonnes)					Oil Equivalent (Tonnes)				
Flaxseed	276 900	650 300	538 500	835 700	464 800	105 209	230 206	190 629	295 838	164 539
Rapeseed	836 900	1 973 100	3 349 700	3 560 700	2 506 100	350 661	826 729	1 403 524	1 491 933	1 050 056
Soybeans	250 400	517 100	475 134	671 700	713 200	45 072	93 078	85 524	120 906	128 376
Mustardseed	35 200	79 380	103 420	53 300	97 500	-	-	-	-	-
Sunflowerseed	24 000	80 967	113 853	220 900	166 100	9 600	32 387	45 541	88 360	66 440

Oil Conversion Factors: Flaxseed..... 35.4%
Rapeseed..... 41.9%
Soybeans..... 18.0%
Mustardseed.... Not Applicable
Sunflowerseed.. 40.0%

SOURCE: Statistics Canada, Catalogues # 22-002; 22-007.

Table 5

CANADIAN OILSEED PRODUCTION BY PROVINCE

	AREA (Thousand Hectares)			YIELD (Kilograms Per Hectare)			PRODUCTION (Tonnes)		
	1978	1979	1980	1978	1979	1980	1978	1979	1980
FLAXSEED									
Manitoba	304	506	324	1 044	929	666	317 517	469 900	215 900
Saskatchewan	182	324	182	1 117	800	907	203 211	259 100	165 100
Alberta	32	97	69	1 191	1 100	1 214	38 102	106 700	83 800
RAPESEED									
Manitoba	425	567	324	1 361	1 160	980	578 336	657 000	317 500
Saskatchewan	1 133	1 335	809	1 281	960	1 234	1 451 510	1 281 400	997 900
Alberta	1 170	1 416	890	1 182	1 049	1 274	1 383 471	1 485 500	1 134 000
British Columbia	73	121	57	839	1 125	995	61 236	136 100	56 700
SOYBEANS									
Ontario	263	283	283	1 807	2 373	2 520	475 138	671 700	713 200
SUNFLOWERSEED									
Manitoba	82	154	129	1 328	1 231	1 231	108 863	208 700	158 800
Saskatchewan	--	10	7	--	1 220	1 043	--	12 200	7 300
MUSTARDSEED									
Manitoba	25	10	18	1 161	950	905	29 030	9 500	16 300
Saskatchewan	53	38	61	950	795	915	50 349	30 200	55 800
Alberta	20	14	20	1 202	971	1 270	24 041	13 600	25 400

SOURCE: Statistics Canada, Catalogue No. 22-002

Table 6

CANADIAN CRUSHINGS OF VEGETABLE OILSEEDS AND PRODUCTION OF OIL AND MEAL BY CROP YEAR

(Tonnes)

CRUSHINGS	1975/76	1976/77	1977/78	1978/79	1979/80
Flaxseed	x 1/	x 1/	x 1/	x 1/	x 1/
Rapeseed	347 161	549 174	630 300	725 100	897 300
Soybeans	722 988	684 995	728 400	742 600	938 400
Sunflowerseed	20 029	x 1/	x 1/	x 1/	x 1/
TOTAL	1 090 178	1 234 709	1 358 700	1 467 700	1 835 700
OIL PRODUCTION					
Flaxseed	x 1/	x 1/	x 1/	x 1/	x 1/
Rapeseed	141 698	225 805	259 000	296 300	364 900
Soybeans	122 694	115 616	125 600	129 000	157 000
Sunflowerseed	8 328	x 1/	x 1/	x 1/	x 1/
TOTAL	272 720	341 421	384 600	425 300	521 900
MEAL PRODUCTION					
Flaxseed	x 1/	x 1/	x 1/	x 1/	x 1/
Rapeseed	197 376	314 903	357 500	416 700	520 800
Soybeans	569 467	540 689	575 400	576 700	738 300
Sunflowerseed	7 266	x 1/	x 1/	x 1/	x 1/
TOTAL	774 109	855 592	932 900	993 400	1 259 100

1/ Confidential - to meet secrecy requirements of the Statistics Act.

Source: Statistics Canada, Catalogue No. 22-007

Table 7

CANADIAN IMPORTS OF FATS AND OILS

(Tonnes)

PRIMARILY EDIBLE Vegetable Oils	1976	1977	1978	1979	1980
Soybean Oil	31 205	28 138	28 069	22 234	12 139
Cottonseed Oil	5 200	5 497	4 723	4 285	4 616
Corn Oil	16 418	15 482	19 707	16 627	17 284
Peanut Oil	6 734	6 845	6 460	5 461	4 977
Coconut Oil	29 647	24 218	22 313	25 712	20 216
Palm Oil	55 001	31 179	23 205	18 366	19 968
Palm Kernel Oil	10 351	7 192	7 252	8 807	8 908
Olive Oil	5 096	4 840	2 814	2 676	4 296
Cocoa Butter	5 008	4 835	3 562	3 495	3 717
Sunflowerseed Oil	271	59	171	460	31
Vegetable Oils & Fats NES	3 156	2 270	3 235	2 032	4 048
Vegetable Cooking Fats & Packaged Salad Oils	144	423	163	23	35
TOTAL	168 231	130 978	121 674	110 178	100 235
Animal Fats					
Lard	19 246	17 841	13 106	10 751	8 289
Butter 1/	12	13	4 165	6	36
TOTAL	19 258	17 854	17 271	10 756	8 325
Marine Oils					
Fish & Marine Oil	299	410	654	308	529
TOTAL	299	410	654	308	529
TOTAL EDIBLE OILS AND FATS	187 788	149 242	139 599	121 242	109 089

PRIMARILY INEDIBLE	1976	1977	1978	1979	1980
Castor Oil	1 313	1 311	1 684	1 721	1 183
Tung Oil	734	699	680	640	526
Inedible Tallow[2/]	832	590	398	1 483	2 183
Animal Oil & Fats	652	568	4 810	1 186	1 547
Animal Grease[3/]	1 700	1 790	2 298	3 335	2 343
TOTAL INEDIBLE OILS & FATS	5 231	4 958	9 870	8 365	7 782
TOTAL EDIBLE & INEDIBLE FATS & OILS IMPORTS	194 332	154 200	149 469	129 607	116 871

1/ Butter imports have been converted to oil equivalent, using the factor of 81 per cent.

2/ This class includes both edible and inedible tallow. The proportions are not known.

3/ This category includes Animal Grease, NES and Wool Grease and Lanolin.

Source: Statistics Canada, Catalogue No. 65-007

Table 8

CANADIAN EXPORTS OF FATS AND OILS

(Tonnes)

	1976	1977	1978	1979	1980
PRIMARILY EDIBLE					
Vegetable Oils					
Soybean Oil	--	23	1 406	9 626	14 140
Rapeseed Oil	42 501	102 700	82 348	119 476	172 686
Margarine & Shortening	706	634	1 559	955	462
Vegetable Oil & Fats	6 974	1 413	3 512	7 220	2 228
TOTAL	50 181	104 770	88 825	137 277	189 516
Animal Fats					
Butter (Oil Equiv.)[1/]	2 861	273	189	16	51
TOTAL	2 861	273	189	16	51
Marine Oils					
Herring Oil	5 315	4 124	3 679	6 274	4 724
Whale Oil	5	14	11	--	8
TOTAL	5 320	4 138	3 690	6 274	4 732
PRIMARILY INEDIBLE					
Linseed Oil	5 108	5 717	8 099	4 650	3 763
Inedible Tallow[2/]	109 884	140 829	138 053	149 267	166 379
Marine Oils[3/]	4 789	11 902	5 707	5 166	4 117
Animal Fats & Oils	3 282	6 931	5 062	5 311	8 667
TOTAL INEDIBLE FATS AND OILS	123 063	165 379	156 921	164 394	182 926
TOTAL EDIBLE AND INEDIBLE FATS AND OILS	181 425	274 560	249 625	307 961	377 225

FOOTNOTES TO

CANADIAN EXPORTS OF FATS AND OILS

1/ Butter exports have been converted to oil equivalent, using the factor of 81 per cent.

2/ This class includes both edible and inedible tallow. The proportions are not known.

3/ Marine oil exports listed under "Inedible Oils" include sun-rotted cod liver oil, a non-specified group of fish and marine oil, and fish liver and visceral oils. While most of these oils can be assumed to be of an inedible grade, a small quantity of edible soy may have been included.

Source: Statistics Canada, Catalogue No. 65-007

CHAPTER 4

THE CANADIAN CANOLA/RAPESEED SITUATION

Production and Exports of Canola/Rapeseed

In 1979/80, production of Canola/rapeseed amounted to 3.4 million tonnes versus 3.5 million tonnes the previous year. Ample carryover stocks on August 1, 1979 permitted a large volume of exports to take place, and a record volume was processed domestically.

Production and Exports of Oil and Meal

A processing volume of 897 300 tonnes of Canola/rapeseed resulted in 375 969 tonnes of oil and 515 948 tonnes of meal. Exports in crop year 1979/80 were 151 500 tonnes and 176 300 tonnes of oil and meal respectively, with the balance used domestically.

The increased utilization of Canola/rapeseed oil and meal in Canada is a reflection of the high quality of these products as food and animal feed respectively. To some degree, they have been substituted for imported oils and meals, particularly soybean products from the U.S.

Table 9

CANADIAN SUPPLY AND DISPOSITION OF RAPESEED
RAPESEED OIL AND RAPESEED MEAL
(Crop Year)

RAPESEED	1975/76	1976/77	1977/78	1978/79	1979/80
			(Tonnes)		
Stocks, Starting	399 913	1 048 648	199 000	325 000	1 068 100
Production	1 748 616	836 886	1 973 100	3 497 100	3 411 100
Exports	683 026	1 017 871	1 013 600	1 642 295	1 742 600
Domestic Crushings	347 160	549 714	630 300	725 100	897 300
RAPESEED OIL					
Exports	32 633	91 648	73 500	109 969	151 500
Domestic Production	141 698	225 806	259 000	290 040	375 969
RAPESEED MEAL					
Exports	27 984	107 088	156 300	172 476	176 300
Domestic Production	197 376	314 903	357 500	416 933	515 948

Source: Statistics Canada, Catalogue No. 22-007

Table 10

CANADIAN EXPORTS OF RAPESEED

(Tonnes)

DESTINATION	1976	1977	1978	1979	1980
Algeria	--	38 266	74 498	43 986	34 773
Australia	--	5	--	18	54
Bangladesh	25 662	17 530	28 969	13 151	22 700
Belgium-Luxembourg	--	248	1 000	750	1 100
Brazil	--	27	1	89 600	--
Czechoslovakia	--	--	2 500	2 490	--
Denmark	--	18	73	--	37
Finland	103	82	116	44	108
France	--	1 519	755	38 676	20 359
Germany, West	15 058	66 843	50 364	232 532	92 439
India	--	13 650	207 013	18 823	9 225
Italy	2 956	1 930	--	15 080	--
Japan	687 076	746 082	801 229	1 157 771	994 622
Korea, South	7 268	--	162	38 152	14 160
Mexico	--	--	--	--	7 641
Morocco	--	--	--	24 155	11 000
Netherlands	16 682	111 876	36 545	275 488	127 557
Singapore	--	12 887	--	--	--
Spain	4	70	253	1 244	253
Sweden	211	104	1	--	--
Switzerland	--	--	2 794	--	--
United Kingdom	13 358	5 884	1 365	11 091	9 566
United States	6 491	563	466	316	11 823
USSR	--	--	--	24 898	720
Venezuela	--	--	27	--	--
Other	--	10 359	1	2	29
TOTAL	774 873	1 027 943	1 208 132	1 988 267	1 358 166
TOTAL VALUE ($'000)	185 971	310 047	369 549	631 446	421 901

Source: Statistics Canada, Catalogue No. 65-004

Table 11

CANADIAN EXPORTS OF CANOLA (RAPESEED) OIL

(Tonnes)

DESTINATION	1976	1977	1978	1979	1980
Algeria	--	3 216	--	6 030	--
Australia	--	2 917	3 314	3 348	4 280
Bangladesh	5 542	7 000	9 014	2 698	--
Brazil	--	--	--	--	707
Chile	--	--	500	12 178	3 344
Dominican Republic	--	--	--	--	878
Ecuador	--	504	--	--	--
Ethiopia	--	--	--	--	799
Germany, West	--	2 217	--	--	--
Haiti	--	2 434	--	--	109
Hong Kong	2 069	5 133	5 592	5 987	13 358
India	23 248	66 794	78 525	70 069	117 524
Japan	8 481	6 415	12 516	8 665	9 769
Lebanon	290	650	--	--	--
Leeward-Windward Is.	--	--	14	14	16
Madagascar	--	284	--	--	--
Mexico	--	--	178	938	349
Morocco	--	--	2 818	3 528	3 148
Mozambique	--	--	515	--	--
Netherlands	--	--	--	--	6 000
New Zealand	--	--	118	121	631
Nicaragua	--	--	--	--	318
Pakistan	--	--	7	170	--
People's Republic of China	--	--	--	--	696
Singapore	--	--	--	696	752
South Korea	--	--	104	1 600	--
Spain	--	--	--	--	5 999
United States	2 124	2 064	1 650	2 607	2 851
Other Countries	--	1 002	14	894	1 178
TOTAL	42 501	102 700	114 879	119 476	172 686
TOTAL VALUE ($'000)	23 081	61 907	66 489	85 073	118 783

Source: Statistics Canada, Catalogue No. 65-004

Table 12

CANADIAN EXPORTS OF CANOLA (RAPESEED) OILCAKE AND MEAL

(Tonnes)

DESTINATION	1976	1977	1978	1979	1980
Chile	--	--	--	3 836	--
Germany, West	4 686	57 565	94 005	56 932	98 074
Ireland	--	1 000	--	950	525
Japan	121	4 001	11 822	108	1 494
Korea, South	--	--	--	3 849	--
Netherlands	26 941	7 967	6 209	3 382	24 795
Norway	--	24 395	30 666	51 054	64 367
Taiwan	--	2 051	5 699	--	80
United Kingdom	16 127	21 968	21 597	35 564	2 825
United States	3 696	8 232	992	6 792	14 780
Other	--	9 212	--	33	16
TOTAL	51 573	136 393	170 990	162 500	206 956
TOTAL VALUE ($'000)	6 089	19 639	25 056	27 931	37 447

Source: Statistics Canada, Catalogue No. 65-004

Table 13

QUALITY DATA FOR WESTERN CANADIAN CANOLA/RAPESEED, SURVEY SAMPLES OF 1979 AND 1980 CROPS

	1979 Survey				1980 Survey			
WESTERN CANADA	Oil Content [1]	Erucic Acid Content [2]	Protein Content [3]	No. of Samples	Oil Content [1]	Erucic Acid Content [2]	Protein Content [3]	No. of Samples
No. 1 CRS	41.8	--	38.2	313	43.2	--	37.9	359
No. 2 CRS	41.5	--	39.9	60	42.6	--	39.6	79
No. 3 CRS	41.7	--	42.3	15	40.8	--	39.1	13
All Grades	41.7	1.3	38.6	393	43.0	1.1	38.2	453
ALL GRADES BY PROVINCES								
Manitoba	41.9	0.7	39.6	85	42.6	0.3	40.2	57
Saskatchewan	42.1	1.0	39.3	164	43.7	0.7	38.8	187
Alberta	41.1	2.1	37.2	144	42.5	1.6	37.1	209

[1] Oil content of seed is reported on a 8.5% moisture basis.

[2] Expressed as percent of total fatty acids in the oil.

[3] Protein content is reported on the oil-free meal and an 8.5% moisture basis.

SOURCE: Canadian Grain Commission, Grain Research Laboratory, Winnipeg

Table 14

SUMMERFALLOW AND STUBBLE CULTIVATION OF RAPESEED

Seeded Area	Summer-fallow	Stubble	Total
		- hectares -	
1976	700 526	153 379	853 905
1977	978 146	438 284	1 425 430
1978	1 809 389	922 298	2 731 687
1979	2 029 000	1 289 000	3 318 000
1980	1 422 000	601 000	2 023 000
Distribution		- per cent -	
1976	78	22	100
1977	69	31	100
1978	66	34	100
1979	61	39	100
1980	70	30	100
Average Yield Per Seeded Hectare		- tonnes per hectare -	
1976	1.244	0.875	1.166
1977	1.451	1.171	1.368
1978	1.306	1.138	1.250
1979	1.063	.984	1.032
1980	1.302	.997	1.211
Production		- tonnes -	
1976	691 735	113 811	825 546
1977	1 422 027	512 565	1 934 592
1978	2 363 240	1 050 077	3 413 317
1979	2 156 000	1 269 000	3 425 000
1980	1 851 000	599 000	2 450 000

Source: Statistics Canada, Catalogue No. 22-002.

Table 15

CANOLA/RAPESEED VARIETIES, AREA SEEDED AND PERCENTAGE OF EACH VARIETY BY PRAIRIE PROVINCES - 1980

VARIETY	MANITOBA		SASKATCHEWAN		ALBERTA		PRAIRIES	
	%	Hectares ('000s)	%	Hectares ('000s)	%	Hectares ('000s)	%	Hectares ('000s)
Altex*	3.7	12.0	8.9	72.0	23.4	208.2	14.3	289.2
Candle*	9.8	31.8	19.4	156.9	39.0	347.0	26.3	532.0
Midas	-	-	6.7	54.2	0.5	4.4	3.0	60.6
Regent*	47.0	152.2	38.3	309.8	4.6	40.9	25.2	509.8
Span	-	-	-	-	1.1	9.7	0.5	10.1
Torch	15.8	51.2	10.7	86.5	19.3	171.7	15.2	307.5
Tower*	21.3	69.0	14.5	117.3	10.6	94.3	13.9	281.2
R-500	-	-	0.5	4.0	-	-	0.2	4.0
Others	2.4	7.8	1.0	8.1	1.5	13.3	1.4	28.3
	100.0	324.0	100.0	809.0	100.0	890.0	100.0	2,023.0

* Varieties designated "Canola"

SOURCE: Grain Research Laboratory, Canadian Grain Commission, Winnipeg

Table 16

CANADIAN RAPESEED PRICES [1/]

(Crop Year)

MONTH	1975/76	1976/77	1977/78	1978/79	1979/80
	.....	.....	$ per tonne	.....	.....
August	293.65	232.37	264.20	295.93	333.57
September	262.35	246.03	277.56	313.04	333.50
October	235.01	226.19	285.45	310.50	318.17
November	218.26	255.73	285.45	315.21	318.32
December	194.45	242.07	270.59	315.14	309.80
January	199.30	254.85	281.31	314.86	308.23
February	206.35	347.44	292.15	337.94	310.07
March	205.25	313.94	318.50	327.87	291.46
April	201.06	365.08	337.45 [2/]	303.91	264.15
May	211.20	369.05	340.97	309.07	292.13
June	238.32	334.88	323.90	322.12	312.25
July	255.95	279.98	287.16	326.76	317.53
Yearly Average	226.63	288.80	298.06	316.03	309.10

[1/] Winnipeg Grain Exchange No. 1 Canadian Rapeseed, basis in-store Thunder Bay, $/tonne.

[2/] As of April 1, 1978, basis in-store Vancouver, $/tonne

Source: Statistics Canada, Catalogue Nos. 22-006 & 22-007

CHAPTER 5

THE CANADIAN SOYBEAN SITUATION

Supply and Disposition - Soybeans

An increased quantity of soybeans was both produced and imported in crop year 1979/80. The opening of a new processing plant at Windsor Ontario is responsible for some of the increase in soybean imports. Production was up slightly to 671 000 tonnes due to favourable yields.

Soybean Oil

Imports were up slightly in 1979/80 over the previous year but relatively unchanged from 1977/78 and earlier years. Exports were 9 000 tonnes; however, most of the domestic oil production remained in Canada.

Soybean Meal

Meal imports were down 9 per cent in 1979/80 compared to 1978/79, while exports were steady at 42 700 tonnes. Domestic production reached a record level of 738 300 tonnes.

Table 17

CANADIAN SUPPLY AND DISPOSITION OF SOYBEANS,

SOYBEAN OIL AND SOYBEAN MEAL

(Crop Year)

SOYBEANS	1975/76	1976/77	1977/78	1978/79	1979/80
			(Tonnes)		
Production	366 808	250 384	580 000	515 600	671 000
Imports	371 026	391 608	262 835	350 400	422 000
Exports	22 289	24 820	64 173	90 900	54 000
Domestic Crushings	722 975	684 995	728 400	742 600	938 400
SOYBEAN OIL					
Imports	30 810	26 704	28 100	26 100	29 100
Exports	1 043	--	1 400	1 800	9 000
Domestic Production	122 694	115 616	125 600	129 000	157 000
SOYBEAN MEAL					
Imports	343 814	339 244	376 300	480 300	439 100
Exports	69 335	51 333	45 600	41 300	42 700
Domestic Production	569 467	540 689	575 400	576 700	738 300

SOURCE: Statistics Canada, Catalogue Nos. 22-006, 22-007 and unpublished data

Table 18

CANADIAN EXPORTS OF SOYBEANS

(Tonnes)

DESTINATION	1976	1977	1978	1979	1980
France	73	75	8 749	195	331
Hong Kong	5 111	6 502	14 291	8 876	11 893
Hungary	--	3	--	--	--
Ireland	--	--	--	--	3 750
Japan	6 825	10 976	34 940	6 498	20 848
Korea, South	--	--	--	--	320
Malaysia	209	227	1 744	394	1 481
Netherlands	--	3 941	5 463	609	361
Singapore	9 667	2 950	13 027	26 416	27 543
Spain	--	8 885	--	--	--
Taiwan	--	397	--	--	--
United Kingdom	80	246	--	--	--
United States	351	94	30	593	6 585
USSR	--	--	--	--	19 309
Other Countries[1/]	2 324	3 541	5 826	4 338	3 333
TOTAL	24 653	37 837	84 152	46 919	95 754
TOTAL VALUE ($'000)	6 100	11 047	24 375	14 869	35 007

[1/] To protect confidentiality under the Statistics Act.

Source: Statistics Canada, Catalogue No. 65-004

Table 19

CANADIAN IMPORTS OF SOYBEANS AND SOYBEAN OIL

S O Y B E A N S

- Tonnes -

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Chile	--	--	--	4	--
Hong Kong	17	6	17	44	51
Japan	--	8	--	--	--
People's Republic of China	--	9	57	51	22
Singapore	--	4	2	2	--
United Kingdom	--	8	--	--	--
United States	397 560	317 935	324 369	350 991	476 996
TOTAL	397 577	317 970	324 445	351 092	477 071
TOTAL VALUE ($'000)	81 136	98 953	91 245	107 807	141 901

S O Y B E A N O I L

- Tonnes -

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
United States	31 205	28 138	28 069	22 234	12 139
TOTAL	31 205	28 138	28 069	22 234	12 139

SOURCE: Statistics Canada, Catalogue No. 65-007

Table 20

IMPORTS OF SOYBEAN OIL BY PROVINCE

	1976		1977		1978		1979		1980	
	Tonnes	'000 of $	Tonnes	'000 of $	Tonnes	'000 of $	Tonnes	'000 of $	Tonnes	'000 of $
Nova Scotia	10	6	--	--	--	--	1	1/	--	--
New Brunswick	1 036	545	1 199	791	1 773	1 351	1 163	1 043	1 196	1 002
Quebec	2 056	788	436	282	936	752	205	187	454	402
Ontario	17 767	8 396	16 367	10 321	14 796	10 156	11 916	9 140	2 343	1 681
Manitoba	4 646	1 865	4 160	2 191	2 563	1 585	2 285	1 558	2 577	1 573
Saskatchewan	225	100	490	264	157	104	552	380	262	224
Alberta	1 931	734	3 246	1 896	5 489	3 526	4 163	2 899	3 985	2 641
British Columbia	3 532	1 783	2 238	1 468	2 355	1 596	1 950	1 502	1 322	1 024
TOTAL	31 205	14 222	28 137	17 216	28 069	19 070	22 234	16 710	12 139	8 548

1/ Less than $1,000.

Source: Statistics Canada, Unpublished Data

Table 21

IMPORTS OF SOYBEAN MEAL BY PROVINCE

	1976		1977		1978		1979		1980	
	Tonnes	'000 of $	Tonnes	'000 of $	Tonnes	'000 of $	Tonnes	'000 of $	Tonnes	'000 of $
Nova Scotia	19	3	2 913	679	130	32	64	58	23	5
New Brunswick	5 569	1 369	7 797	2 418	9 729	2 998	11 401	3 981	5 881	2 053
Quebec	118 447	25 368	99 456	26 329	103 390	28 260	101 246	30 393	60 437	17 675
Ontario	57 881	12 891	84 149	21 713	114 857	28 222	153 275	43 402	139 072	39 083
Manitoba	69 789	12 250	68 543	16 507	86 357	19 517	95 377	24 942	94 145	25 165
Saskatchewan	16 740	16 740	20 127	5 235	20 806	5 022	33 915	9 776	25 640	7 706
Alberta	42 521	7 120	38 634	9 564	46 306	11 501	49 976	13 168	47 224	12 621
British Columbia	37 896	7 810	29 681	7 861	31 083	7 501	19 303	5 563	31 216	8 694
TOTAL	348 862	70 038	351 300	90 306	412 658	103 053	464 557	131 283	403 638	113 003

Source: Statistics Canada, Unpublished Data

Table 22

CANADIAN EXPORTS OF SOYBEAN OIL AND MEAL

(Tonnes)

SOYBEAN OIL

DESTINATION	1976	1977	1978	1979	1980
Morocco	--	--	--	2 911	11 640
Netherlands	--	--	1 406	3 004	2 401
United Kingdom	--	--	--	787	--
United States	--	23	--	6	63
Venezuela	--	--	--	2 916	--
Other Countries	--	--	--	--	36
TOTAL	--	23	1 406	9 626	14 140
TOTAL VALUE ($'000)	--	12	742	6 996	9 772

SOYBEAN MEAL

DESTINATION	1976	1977	1978	1979	1980
Cuba	--	--	--	--	25 946
Denmark	--	6 749	2 956	--	4 609
Germany, West	28	3 790	--	--	--
Hong Kong	--	--	800	163	109
Ireland	--	--	--	--	20 186
Netherlands	--	--	1 001	--	--
United Kingdom	59 653	34 333	41 929	21 581	24 052
United States	987	718	1 622	853	3 411
TOTAL	62 711	45 589	48 308	22 951	78 313
TOTAL VALUE ($'000)	11 272	10 747	12 436	6 776	25 588

Source: Statistics Canada, Catalogue No. 65-004

Table 23

CANADIAN SOYBEAN PRICES[1/]

(Crop Year)

MONTH	1975/76	1976/77	1977/78	1978/79	1979/80
	.....	.....	$ per tonne	.....	.....
August	219.22	211.96	207.49	257.86	292.65
September	200.48	227.76	186.63	250.90	290.22
October	175.40	211.09	197.44	273.58	263.02
November	159.83	221.38	197.43	270.43	255.38
December	154.60	243.97	215.75	276.95	255.24
January	160.34	248.43	209.95	277.73	233.64
February	162.36	260.69	205.98	303.40	247.84
March	160.98	304.65	243.13	306.70	233.05
April	160.84	344.51	259.88	297.29	228.91
May	176.83	347.45	273.40	295.20	238.93
June	214.03	298.82	266.61	321.21	242.56
July	224.68	224.82	256.72	308.36	285.61
YEARLY AVERAGE	180.82	262.25	226.98	286.83	255.59

1/ Buying prices, carlots, fob Chatham, No. 2 and better.

Source: Statistics Canada, Catalogue No. 22-006.

CHAPTER 6

THE CANADIAN FLAXSEED SITUATION

Production

Crop year 1979/80 saw a major increase in flaxseed production to 815 400 tonnes, up 43 per cent over 1978/79. Starting stocks and exports were down slightly in 1979/80.

Exports of Flaxseed, Linseed Oil and Meal

Flax exports in calendar year 1980 amounted to 401 935 tonnes, valued at $137 million. Principal markets were West Germany and Japan. Linseed oil exports in 1980 were 3 763 tonnes and for linseed meal, 8 763 tonnes. These are minor export commodities, compared with flaxseed. Most importing countries wish to utilize their domestic processing facilities.

Table 24

CANADIAN SUPPLY AND DISPOSITION OF FLAXSEED,
LINSEED OIL AND LINSEED MEAL
(Crop Year)

	1975/76	1976/77	1977/78	1978/79	1979/80
			- Tonnes -		
FLAXSEED					
Stocks, Starting[1]	218 578	380 640	280 400	470 000	391 600
Production	444 523	276 875	402 400	571 500	815 400
Imports	--	[3]	[3]	98	--
Exports	195 107	332 708	337 500	538 369	448 800
Domestic Crushing	x[2]	x[2]	x[2]	x[2]	x[2]
LINSEED OIL					
Exports	5 817	4 525	4 597	7 146	4 744
Domestic Production	x[2]	x[2]	x[2]	x[2]	x[2]
LINSEED MEAL					
Exports	636	3 679	2 015	5 064	8 012
Domestic Production	x[2]	x[2]	x[2]	x[2]	x[2]

[1] Total stocks in all positions

[2] Confidential - to meet secrecy requirements of the Statistics Act

[3] Less than one tonne

SOURCE: Statistics Canada, Catalogue No. 22-007, and unpublished data

Table 25

CANADIAN EXPORTS OF FLAXSEED

(Tonnes)

DESTINATION	1976	1977	1978	1979	1980
Austria	36	--	--	10	--
Belgium-Luxembourg	1 763	11 658	20 209	9 215	11 919
Czechoslovakia	3 151	5 836	--	3 001	20 638
Denmark	--	614	3 849	2 500	699
France	508	6 722	17 427	14 168	2 140
Germany, West	81 224	117 479	140 737	161 056	119 604
Greece	1 500	--	--	3 055	5 819
Italy	--	--	--	1 915	1 526
Japan	90 647	78 984	100 863	99 424	107 357
Korea, North	--	269	--	--	--
Korea, South	1 750	3 373	3 934	5 351	--
Mexico	--	--	--	--	17 000
Netherlands	11 078	25 799	74 800	111 472	52 058
Spain	8 547	11 315	4 329	6 761	2 573
Sweden	54	2 279	206	208	852
Switzerland	1 468	9 020	1 118	8 961	13 630
Taiwan	--	911	6 217	180	1 165
United Kingdom	4 672	13 892	11 724	33 942	11 330
United States	40 198	41 107	23 427	50 929	33 625
USSR	--	--	--	22 677	--
TOTAL	246 602	329 366	409 417	534 825	401 935
TOTAL VALUE ($'000)	66 278	93 538	102 424	168 788	137 267

Source: Statistics Canada, Catalogue No. 65-004

Table 26

CANADIAN IMPORTS OF FLAXSEED

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
United States	1/	51	26	98	459
Other Countries	--	18	--	--	5
TOTAL	1/	69	26	98	464
TOTAL VALUE ($'000)	--	45	10	42	150

1/ Less than one tonne

Source: Statistics Canada, Catalogue No. 65-007

Table 27

CANADIAN EXPORTS OF LINSEED OIL

(Tonnes)

DESTINATION	1976	1977	1978	1979	1980
Belgium-Luxembourg	1 965	1 717	1 811	--	--
Netherlands	2 848	1 724	1 524	3 468	3 716
Switzerland	--	--	--	1 007	--
United Kingdom	250	2 241	2 944	--	--
United States	34	27	29	141	--
Venezuela	8	7	20	1	11
Other Countries	1	1	--	33	36
TOTAL	5 108	5 717	8 099	4 650	3 763
TOTAL VALUE ($'000)	2 758	2 786	3 390	2 929	2 694

Source: Statistics Canada, Catalogue No. 65-004

Table 28

CANADIAN EXPORTS OF LINSEED CAKE AND MEAL

(Tonnes)

DESTINATION	1976	1977	1978	1979	1980
Belgium-Luxembourg	481	--	--	--	--
Germany, West	3 150	--	--	--	3 719
Netherlands	--	3 201	3 187	2 785	3 766
Trinidad-Tobago	60	91	26	18	--
United States	159	1 430	2 370	1 715	1 278
TOTAL	3 875	4 726	5 583	4 518	8 763
TOTAL VALUE ($'000)	835	741	1 087	1 029	2 162

Source: Statistics Canada, Catalogue No. 65-004

Table 29

QUALITY DATA FOR WESTERN CANADIAN FLAXSEED, SURVEY SAMPLES OF 1978, 1979 AND 1980 CROPS

	Oil Content [1]			Iodine Value (Wijs Units)			Protein Content [2]			No. of Samples		
WESTERN CANADA	1978	1979	1980	1978	1979	1980	1978	1979	1980	1978	1979	1980
No. 1 CW	43.7	43.1	43.0	190	195	197	41.2	42.6	40.4	237	115	244
No. 2 CW	43.1	42.4	41.8	191	199	199	40.1	40.4	38.1	16	16	29
No. 3 CW	41.6	40.6	38.2	188	197	199	40.8	37.8	35.6	2	8	10
All Grades	43.6	42.9	42.7	190	195	197	41.1	42.1	40.0	255	139	283
ALL GRADES												
Manitoba	43.5	43.0	42.4	190	196	197	40.8	41.9	39.8	132	32	135
Saskatchewan	43.8	42.9	43.3	190	196	197	41.3	42.0	40.6	104	89	95
Alberta	43.4	43.0	42.4	192	193	199	42.7	43.0	39.6	19	18	53

[1] Oil Content of seed is reported on moisture-free basis.

[2] Protein Content is reported on oil-free meal and moisture free basis.

SOURCE: Grain Research Laboratory, Canadian Grain Commission, Winnipeg.

Table 30

SUMMERFALLOW AND STUBBLE CULTIVATION OF FLAXSEED

Seeded Area	Summer-fallow	Stubble	Total
		- hectares -	
1976	124 646	199 110	323 756
1977	241 198	333 468	574 666
1978	180 089	337 920	518 009
1979	322 000	609 000	931 000
1980	193 000	382 000	575 000
Distribution		- per cent -	
1976	38	62	100
1977	42	58	100
1978	35	65	100
1979	35	65	100
1980	34	66	100
Average Yield		- kg. per hectare -	
1976	1 018	754	855
1977	1 201	962	1 063
1978	1 232	1 000	1 082
1979	957	833	875
1980	1 016	704	809
Production		- tonnes -	
1976	127 006	149 868	276 874
1977	289 575	320 056	609 632
1978	220 992	337 837	558 829
1979	308 000	507 000	815 000
1980	196 000	269 000	465 000

SOURCE: Statistics Canada, Catalogue No. 22-002

Table 31

FLAXSEED VARIETIES, AREA SEEDED AND PERCENTAGE OF EACH VARIETY BY PRAIRIE PROVINCES - 1980

VARIETY	MANITOBA		SASKATCHEWAN		ALBERTA		PRAIRIES	
	%	Hectares ('000s)	%	Hectares ('000s)	%	Hectares ('000s)	%	Hectares ('000s)
Culbert	11.2	36.3	-	-	-	-	6.3	36.2
Dufferin	46.6	151.0	50.1	91.2	5.9	14.8	42.6	245.0
Linott	29.5	95.5	7.9	14.4	0.1	0.1	19.1	110.3
Noralta	5.4	17.5	25.6	46.6	47.5	32.8	16.9	97.2
Norland	-	-	5.3	9.6	-	-	1.7	9.8
Raja	3.0	9.7	2.9	5.3	5.6	3.9	3.3	19.0
Redwood 65	3.7	12.0	7.7	14.0	40.2	27.7	9.5	54.6
Others	0.6	1.9	0.5	0.9	0.7	0.5	0.6	3.5
TOTAL	100.0	324.0	100.0	182.0	100.0	69.0	100.0	575.0

SOURCE: Grain Research Laboratory, Canadian Grain Commission, Winnipeg

Table 32

CANADIAN FLAXSEED PRICES [1/]

(Crop Year)

MONTH	1975/76	1976/77	1977/78	1978/79	1979/80
	.....	.....	$ per tonne	.....	.....
August	336.35	281.18	213.77	238.10	346.23
September	311.00	282.56	218.30	251.94	361.05
October	284.34	274.94	220.15	270.36	355.95
November	258.20	265.83	218.34	268.93	334.45
December	247.48	262.38	209.83	271.14	304.83
January	258.65	273.85	205.30	297.52	310.48
February	257.17	281.83	209.44	345.26	320.49
March	254.32	291.52	230.74	339.31	310.49
April	249.59	333.10	249.53	329.39	287.28
May	258.99	302.69	258.84	324.66	309.76
June	280.84	219.62	249.81	352.18	329.20
July	292.40	242.61	231.02	355.84	377.20
Yearly Average	274.15	274.31	225.97	303.72	328.95

[1/] Winnipeg Grain Exchange No. 1 CW
Flaxseed Basis Thunder Bay

Source: Statistics Canada, Catalogue No. 22-007

CHAPTER 7

THE CANADIAN SUNFLOWERSEED SITUATION

Production

For crop year 1979/80, Statistics Canada reported a large increase in planted area, to 161 300 hectares. The average yield also increased so that Canadian production reached 217 800 tonnes, mostly in Manitoba. Farmers in Saskatchewan and Alberta to date have not chosen to grow large areas of sunflowerseed, due in part to a lack of suitable varieties but also due to a lack of specialized planting and harvesting equipment.

Trade

Sunflowerseed exports in 1980 amounted to 95 793 tonnes, up 7 per cent over 1979. Major importers were West Germany, the Netherlands and the U.S.

Sunflowerseed oil exports declined to 31 tonnes in 1980 from 460 tonnes the previous year.

Table 33

CANADIAN SUNFLOWERSEED: ACREAGE, YIELD AND PRODUCTION

(Crop Year)

	1975/76	1976/77	1977/78	1978/79	1979/80
			- Hectares -		
Manitoba	25 091	20 235	66 775	82 153	154 000
Saskatchewan	--	--	--	4 452	7 300
Alberta	--	--	--	--	--
Canada - TOTAL	25 091	20 235	66 775	86 605	161 300
			- Yield - Kilograms/Hectare -		
Manitoba	1 193	1 188	1 188	1 325	1 355
Saskatchewan	--	--	--	1 120	1 247
Alberta	--	--	--	--	--
Canada - Average	1 193	1 188	1 188	1 314	1 350
			- Production - Tonnes -		
Manitoba	29 945	24 047	79 379	108 863	208 700
Saskatchewan	--	--	--	4 990	9 100
Alberta	--	--	--	--	--
Canada - TOTAL	29 945	24 047	79 379	113 853	217 800

Source: Statistics Canada, Catalogue No. 22-002

Table 34

CANADIAN EXPORTS OF SUNFLOWERSEED

(Tonnes)

DESTINATION	1976	1977	1978	1979	1980
Australia	17	15	37	44	33
Belgium-Luxembourg	--	--	--	--	5 351
Czechoslovakia	1 604	6 998	--	--	--
Germany, West	3 590	344	43 607	59 553	33 912
Mexico	--	--	--	--	3 488
Netherlands	3 001	14 284	17 999	5 380	13 878
Portugal	--	--	--	--	8 651
Spain	--	--	40	3 458	--
Panama	--	--	--	--	4 080
Sweden	4	5	72	75	283
United Kingdom	25	19	340	8 068	7 566
United States	1 238	2 949	3 913	12 236	17 703
Other Countries	20	1 489	16	417	938
TOTAL	9 501	26 103	74 119	89 231	95 793
TOTAL VALUE ($'000)	3 258	6 225	21 675	25 757	28 379

Source: Statistics Canada, Catalogue No. 65-004

Table 35

CANADIAN IMPORTS OF SUNFLOWERSEED OIL

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
United States	271	59	164	458	29
Other Countries	--	--	7	2	2
TOTAL	271	59	171	460	31
TOTAL VALUE ($'000)	147	43	136	343	29

Source: Statistics Canada, Catalogue No. 65-007

CHAPTER 8

THE CANADIAN MUSTARDSEED SITUATION

Production

In 1979, production of mustardseed (yellow, brown and oriental) amounted to 49 900 tonnes from 64 000 hectares. Production was down 52 per cent compared with crop year 1978/79.

Saskatchewan produces about two-thirds of Canada's mustardseed, most of which is exported in unprocessed form.

Exports

Exports of mustardseed in 1980 were down very slightly from 1979. The value of 1980 exports was $22,765,000 for 66 350 tonnes. The EEC countries and the U.S. were the principal importers in 1980.

Table 36

CANADIAN MUSTARDSEED: ACREAGE, YIELD AND PRODUCTION

(Crop Year)

	1975/76	1976/77	1977/78	1978/79	1979/80
			- Hectares -		
Manitoba	9 308	7 285	16 188	25 091	10 000
Saskatchewan	30 757	19 020	40 469	52 601	40 000
Alberta	25 911	8 903	16 997	20 234	14 000
Canada - TOTAL	65 965	35 208	73 654	97 936	64 000
			- Yield - Kilograms/Hectare -		
Manitoba	708	899	1 011	1 159	950
Saskatchewan	739	1 004	1 179	959	670
Alberta	808	1 093	910	1 191	971
Canada - Average	762	1 004	1 081	1 056	780
			- Production - Tonnes -		
Manitoba	6 578	6 531	16 329	29 038	9 500
Saskatchewan	22 679	19 051	47 627	50 363	26 800
Alberta	20 865	9 707	15 422	24 047	13 600
Canada - TOTAL	50 121	35 289	79 378	103 448	49 900

Source: Statistics Canada, Catalogue No. 22-002

Table 37

CANADIAN EXPORTS OF MUSTARDSEED

(Tonnes)

DESTINATION	1976	1977	1978	1979	1980
Australia	--	22	6	18	18
Belgium-Luxembourg	574	435	--	749	5 903
Czechoslovakia	35	--	308	--	--
France	181	--	--	--	--
Germany, West	2 613	2 157	7 622	6 169	8 189
India	--	--	2 958	6 596	--
Japan	7 517	7 024	6 701	5 369	7 496
Mexico	108	196	429	449	180
Netherlands	9 114	14 138	25 435	17 742	13 767
Spain	40	--	--	254	109
Sweden	54	--	34	54	36
Switzerland	--	1 108	--	--	150
United Kingdom	85	18	171	151	68
United States	38 526	31 312	29 378	29 080	29 932
Venezuela	--	--	32	53	57
Other Countries	21	28	9	704	445
TOTAL	58 871	56 438	73 339	67 388	66 350
TOTAL VALUE ($'000)	20 946	19 660	25 208	21 757	22 765

Source: Statistics Canada, Catalogue No. 65-004

Table 38

CANADIAN IMPORTS OF GROUND MUSTARD

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Hong Kong	--	1/	--	--	1/
United Kingdom	169	241	220	221	353
United States	99	98	43	27	16
Other	--	9	20	19	1/
TOTAL	269	349	284	267	371
TOTAL VALUE ($'000)	358	548	625	779	1 100

1/ Less than one tonne.

Source: Statistics Canada, Catalogue No. 65-007

CHAPTER 9

SPECIFIED AND DEODORIZED FATS AND OILS

Canadian production of deodorized oils in 1980 increased by nearly 3 per cent. Canola oil lead the way with an increase of 8.5 per cent, principally as shortening and salad oils.

Imports of vegetable oils and fats (NES) increased to 4 048 tonnes, valued at $7.9 million. Many imported oils declined in volume and value - coconut, corn and peanut, while others increased slightly - cottonseed, olive, palm and palm kernel. These oils are used in relatively small quantities for specialized products such as canned sardines, or for blending with domestically-produced oils.

In the export category, tallow was a major commodity in 1980, with export tonnage reaching 175 046, a 13 per cent rise over 1979.

Table 39

CANADIAN PRODUCTION OF DEODORIZED OILS

(Tonnes)

Vegetable Oils	1979 Margarine Oil	1979 Shortening Oil	1979 Salad Oil	1979 Total	1980 Margarine Oil	1980 Shortening Oil	1980 Salad Oil	1980 Total
Coconut	x	x	-	x	x	x	x	12 597
Corn	x	x	x	25 284	x	x	x	25 181
Cottonseed	x	x	x	x	x	x	x	x
Palm	x	x	-	x	x	x	x	16 074
Peanut	x	x	x	5 671	x	x	x	x
Rapeseed	44 041	55 769	69 152	168 962	38 654	65 531	79 084	183 269
Soybean	55 515	x	x	122 364	61 093	x	x	124 841
Sunflowerseed	x	x	x	13 528	x	x	x	15 288
Other	x	x	x	11 065	x	x	x	x
Total Vegetable Oils	119 049	150 401	111 087	380 537	120 473	154 362	116 813	391 648
Total Deodorized Oils	122 743	201 475	111 087	435 305	122 985	206 599	116 813	446 397

x Confidential to meet secrecy requirements of the Statistics Act

Source: Statistics Canada, Catalogue No. 32-006

Table 40

CANADIAN IMPORTS OF VEGETABLE OILS AND FATS (NES)

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Austria	1	2	--	--	1
Brazil	212	15	60	--	--
Denmark	23	23	4	12	--
France	13	2	1	3	14
Germany, West	6	9	27	6	4
Greece	1/	--	--	--	--
Hong Kong	29	47	66	70	157
India	6	1/	--	--	96
Japan	47	98	74	90	89
Netherlands	2	1	20	8	--
New Zealand	10	--	--	--	--
Paraguay	--	--	14	--	--
People's Republic of China	14	19	15	4	2
Singapore	2	--	--	3	4
Switzerland	3	6	2	--	2
United Kingdom	331	512	258	140	845
United States	2 452	1 528	2 690	1 706	2 829
Yugoslavia	1/	8	22	--	2
TOTAL	3 156	2 270	3 235	2 032	4 048
TOTAL VALUE ($'000)	3 069	3 111	3 823	3 290	7 924

1/ Less than one tonne

Source: Statistics Canada, Catalogue No. 65-007

Table 41

CANADIAN IMPORTS OF COCOA BUTTER

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Belgium-Luxembourg	--	--	35	222	--
Brazil	875	416	213	128	481
Cuba	92	75	72	163	100
Ecuador	--	180	--	40	--
Germany, West	--	170	262	663	336
Ivory Coast	299	178	231	108	234
Jamaica	--	10	10	15	31
Mexico	--	--	--	--	202
Netherlands	1 612	1 453	1 677	991	856
Nigeria	--	--	100	--	--
Singapore	26	--	--	--	--
United Kingdom	1 409	1 714	717	272	395
United States	693	636	245	815	888
Other Countries	--	--	--	78	194
TOTAL	5 008	4 835	3 562	3 495	3 717
TOTAL VALUE ($'000)	16 714	24 618	18 841	22 323	29 432

Source: Statistics Canada, Catalogue No. 65-007

Table 42

CANADIAN IMPORTS OF COCONUT OIL

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Australia	1/	1/	359	--	--
Brazil	--	--	--	299	--
Indonesia	173	--	--	--	--
Jamaica	2	3	2	4	--
Malaysia	1 730	4 664	1 934	5 577	4 918
Philippines	18 623	18 827	15 607	15 480	14 066
Sri Lanka	8 190	156	2 785	2 475	--
United Kingdom	174	1	3	2	14
United States	752	567	1 623	1 872	946
Other Countries	--	--	--	3	272
TOTAL	29 647	24 218	22 313	25 712	20 216
TOTAL VALUE ($'000)	10 847	14 447	15 126	28 914	16 492

1/ Less than one tonne

Source: Statistics Canada, Catalogue No. 65-007

Table 43

CANADIAN IMPORTS OF CORN OIL

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
United States	16 418	15 482	19 707	16 627	17 284
TOTAL	16 418	15 482	19 707	16 627	17 284
TOTAL VALUE ($'000)	8 705	10 612	18 154	14 214	11 946

Source: Statistics Canada, Catalogue No. 65-007

Table 44

CANADIAN IMPORTS OF COTTONSEED OIL

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
United States	5 200	5 497	4 723	4 285	4 616
TOTAL	5 200	5 497	4 723	4 285	4 616
TOTAL VALUE ($'000)	2 863	3 376	3 162	3 402	3 153

Source: Statistics Canada, Catalogue No. 65-007

Table 45

CANADIAN IMPORTS OF OLIVE OIL

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
France	28	15	35	23	29
Greece	162	107	218	311	261
Italy	525	737	920	915	1 097
Portugal	106	155	162	169	106
Spain	2 132	3 750	1 266	1 111	2 576
United States	2 117	62	213	147	227
Other Countries	25	14	--	--	--
TOTAL	5 096	4 840	2 814	2 676	4 296
TOTAL VALUE ($'000)	4 646	3 406	4 923	5 941	6 802

Source: Statistics Canada, Catalogue No. 65-007

Table 46

CANADIAN IMPORTS OF PALM OIL

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Indonesia	20 592	15 249	16 254	9 946	5 507
Malaysia	31 800	13 972	5 840	6 186	4 585
Netherlands	--	8	508	--	119
Philippines	250	--	--	--	--
Singapore	1	--	--	1 025	9 553
United States	2 354	1 941	573	1 199	203
Other Countries	2	9	30	10	1
TOTAL	55 001	31 179	23 205	18 366	19 968
TOTAL VALUE ($'000)	19 285	17 142	14 763	13 608	13 422

Source: Statistics Canada, Catalogue No. 65-007

Table 47

CANADIAN IMPORTS OF PALM KERNEL OIL

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Denmark	--	7	16	15	15
Indonesia	2 223	3 905	1 605	1 002	--
Malaysia	4 685	2 941	4 552	7 134	8 565
Netherlands	10	--	--	--	--
Singapore	44	--	250	--	--
United States	3 388	339	845	655	328
Other Countries	--	--	--	1	--
TOTAL	10 351	7 192	7 252	8 807	8 908
TOTAL VALUE ($'000)	3 174	3 236	5 387	9 182	7 282

Source: Statistics Canada, Catalogue No. 65-007

Table 48

CANADIAN IMPORTS OF PEANUT OIL

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Brazil	3 602	604	--	1 498	--
Hong Kong	52	40	52	38	31
Nicaragua	693	--	--	--	--
United States	2 381	6 201	6 393	3 922	4 944
Other Countries	--	--	9	3	2
TOTAL	6 734	6 845	6 460	5 461	4 977
TOTAL VALUE ($'000)	4 252	5 582	6 964	5 761	4 224

Source: Statistics Canada, Catalogue No. 65-007

Table 49

CANADIAN EXPORTS OF VEGETABLE OILS & FATS (NES)

(Tonnes)

DESTINATION	1976	1977	1978	1979	1980
Barbados	13	46	53	138	54
Colombia	443	--	--	--	--
Cuba	4	3	3	3	3
Emirates, UA	13	--	--	11	--
France	--	--	--	2 044	--
Germany, West	2 205	3	--	1	25
Guyana	2	4	383	--	4
Leeward-Windward Is.	45	100	41	190	180
Netherlands	--	57	41	2 475	--
Saudi Arabia	3 156	32	15	--	--
Trinidad-Tobago	120	159	2 059	789	818
United Kingdom	125	66	47	28	1
United States	811	855	702	1 468	545
Other Countries	37	88	167	73	598
TOTAL	6 974	1 413	3 512	7 220	2 228
TOTAL VALUE ($'000)	1 914	918	1 915	5 530	3 027

SOURCE: Statistics Canada, Catalogue No. 65-004

Table 50

MANUFACTURERS PACKAGED SALES OF SPECIFIED FATS AND OILS PRODUCTS

(Thousands of Tonnes)

	1976	1977	1978	1979	1980
Margarine 1/	126	136	111	128	130
Butter 2/	117	94	132	103	103
Shortening					
Packaged 3/	90	90	94	99	x 6/
Bulk 4/	81	81	85	n.a.	82
Refined Oils					
Salad 5/	95	101	99	61	56

1/ Includes retail and commercial packages. Commercial sales (21-450 pound) packages account for about 20 per cent of total output.

2/ Includes creamery and whey butter.

3/ Retail packages up to 20 pounds only.

4/ Covers commercial (21-450 pound) packages, bulk and other than packaged retail sales of manufacturers of shortening and deodorized shortening oil. Includes baking and frying fats and oils.

5/ Retail, commercial and industrial sales.

6/ Confidential

Source: Statistics Canada, Catalogue No. 32-006

Table 51

CANADIAN IMPORTS OF LARD AND SHORTENING

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
France	--	3	1	9	17
Germany, West	4	3	9	16	16
Greece	15	--	23	11	--
St. Pierre-Miquelon	22	--	--	--	--
Sweden	55	45	33	--	--
United States	35 451	31 880	31 241	13 938	12 177
Other Countries	3	--	10	--	3
TOTAL	35 559	31 931	31 317	17 437	12 213
TOTAL VALUE ($'000)	16 967	18 972	22 128	10 492	8 086

Source: Statistics Canada, Catalogue No. 65-007

Table 52

CANADIAN EXPORTS OF MARGARINE, SHORTENING AND LARD

(Tonnes)

DESTINATION	1976	1977	1978	1979	1980
Bahrain	17	--	6	6	--
Bermuda	16	15	27	20	17
Emirates, UA	48	64	41	72	--
Germany, West	--	2	1	1	2
Hong Kong	--	--	--	11	66
Jamaica	35	4	--	--	--
Japan	--	--	3	--	--
Jordan	18	16	--	43	--
Kuwait	67	46	95	108	--
Lebanon	--	190	203	92	2
Leeward-Windward Is.	--	19	45	88	70
Libya	7	--	--	--	--
Netherlands-Antilles	--	32	40	92	79
Puerto Rico	--	--	72	--	--
Qatar	15	11	12	--	--
Saudi Arabia	405	64	665	280	--
St. Pierre-Miquelon	25	41	37	34	26
Trinidad-Tobago	--	1	--	18	--
United Kingdom	--	--	--	2	--
United States	49	122	311	88	200
TOTAL	706	634	1 559	955	462
TOTAL VALUE ($'000)	543	770	1 914	1 316	376

Source: Statistics Canada, Catalogue No. 65-004

Table 53

CANADIAN IMPORTS OF VEGETABLE COOKING FATS AND PACKAGED SALAD OILS

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
France	--	1	1	3	--
Greece	--	12	18	--	--
Sweden	5	1	4	5	--
United Kingdom	3	4	10	5	3
United States	135	404	127	10	32
TOTAL	144	423	163	23	35
TOTAL VALUE ($'000)	109	342	213	26	32

Source: Statistics Canada, Catalogue No. 65-007

Table 54

CANADIAN IMPORTS OF TALLOW, ANIMAL OILS, GREASES AND FATS (NES)

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Australia	5	--	12	1 181	2
Germany, West	47	41	51	1	8
United Kingdom	17	--	11	5	36
United States	2 654	2 900	7 418	4 924	5 998
Other Countries	11	7	14	--	29
TOTAL	2 889	2 948	7 506	6 111	6 073
TOTAL VALUE ($'000)	1 292	1 521	2 138	3 463	3 589

Source: Statistics Canada, Catalogue No. 65-007

Table 55

CANADIAN EXPORTS OF TALLOW, ANIMAL OILS AND FATS (NES)

(Tonnes)

DESTINATION	1976	1977	1978	1979	1980
Barbados	21	--	--	--	--
Belgium-Luxembourg	2 022	798	2 203	988	--
Brazil	--	--	6	18	18
Chile	--	249	--	280	669
Colombia	32	22	28	--	17
Cuba	10 702	5 600	3 026	3 001	4 963
Dominican Republic	--	--	--	320	845
France	10	2 362	3 682	3 524	8 004
Germany, West	3 857	2 112	898	5 071	9 633
Guatemala	--	517	17	22	39
Iran	1 300	--	1 079	--	--
Ireland	--	--	--	220	26
Italy	1 413	--	--	--	--
Ivory Coast	--	496	1 178	--	--
Jamaica	474	338	--	--	59
Japan	18 058	25 111	23 719	28 176	34 580
Kenya	50	110	1 550	200	175
Korea, South	13 190	26 269	22 996	25 801	21 245
Leeward-Windward Is.	4	1	--	20	8
Malaysia	56	146	118	72	237
Mexico	20	44	11	--	--
Morocco	--	--	600	325	1 151
Netherlands	29 077	38 105	47 483	54 991	62 807
Nigeria	1 319	--	--	--	--
People's Republic of China	2 033	8 630	3 065	4 065	3 049
Portugal	157	145	211	210	160
Singapore	18	51	18	46	33
Spain	7 390	9 343	6 997	2 018	791
Switzerland	272	169	236	232	261
Taiwan	1 680	2 900	1 950	600	900
Trinidad-Tobago	503	486	504	1 364	765
United Kingdom	9 778	18 064	25 234	13 598	13 459
United States	9 651	4 456	4 889	8 374	9 462
Venezuela	66	1 132	208	228	333
Zaire	--	--	200	--	--
Other Countries	5	104	5	1 018	1 357
TOTAL	113 166	140 829	140 115	154 578	175 046
TOTAL VALUE ($'000)	38 589	54 856	68 256	97 500	92 742

Source: Statistics Canada, Catalogue No. 65-004

CHAPTER 10

FISH AND MARINE OILS AND MEALS

Canadian Trade

Exports of marine oils in 1980 decreased rather sharply to 8 569 tonnes valued at $4.6 million. Imports of marine oils amounted to only 529 tonnes, valued at $883,000. This is a large increase over 1979 figures.

Exports of fish meal and condensed solubles increased to 30 719 tonnes in 1980, valued at $14.8 million. Imports of fish meal were only 323 tonnes in 1980.

Fish oil and meal production data is no longer available.

Table 56

CANADIAN EXPORTS OF MARINE OILS BY TYPES

(Tonnes)

TYPE	1976	1977	1978	1979	1980
Cod Liver Oil, Sun Rotted	1 381	915	1 546	1 162	1 032
Herring Oil	5 315	4 124	3 679	6 274	4 724
Whale Oil	5	14	11	--	8
Fish and Marine Animal Oil NES	3 408	10 987	4 161	4 004	2 805
TOTAL	10 110	16 040	9 397	11 440	8 569
TOTAL VALUE ($'000)	2 968	3 950	4 633	4 407	4 575

Source: Statistics Canada, Catalogue No. 65-004

Table 57

CANADIAN IMPORTS OF FISH AND MARINE ANIMAL OILS (NES)

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Japan	9	9	10	--	18
Netherlands	6	--	16	--	--
Norway	150	3	155	135	193
United Kingdom	28	5	182	66	98
United States	99	393	288	107	219
Other Countries	4	--	3	--	1
TOTAL	299	410	654	308	529
TOTAL VALUE ($'000)	233	263	699	381	883

Source: Statistics Canada, Catalogue No. 65-007

Table 58

CANADIAN EXPORTS OF FISH MEAL AND CONDENSED SOLUBLES

(Tonnes)

TYPE	1976	1977	1978	1979	1980
Herring Meal and Pilchard Meal	14 972	11 181	11 484	7 054	8 086
Fish Meal NES	17 000	16 445	23 546	19 084	22 283
Fish Condensed Homogenized Solubles	941	307	517	--	350
TOTAL (Meal Only)	32 913	27 933	35 547	26 138	30 719
TOTAL VALUE (Meal Only) ($'000)	9 422	11 367	16 520	12 461	14 761

Source: Statistics Canada, Catalogue No. 65-004

Table 59

CANADIAN IMPORTS OF FISH MEAL

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Cuba	163	--	--	--	--
France	--	--	--	12	--
Germany, West	229	--	--	--	--
Puerto Rico	40	--	--	--	--
Taiwan	--	13	--	--	--
United Kingdom	7	--	2	21	12
United States	521	451	340	275	311
TOTAL	962	464	342	308	323
TOTAL VALUE ($'000)	309	153	91	111	80

Source: Statistics Canada, Catalogue No. 65-007

CHAPTER 11

OTHER INEDIBLE FATS AND OILS

This chapter includes data on the following - castor oil, tung oil, tall oil, tall oil pitch, tall oil fatty acids, chemically modified oils, fats and waxes and mixtures and derivates of oils, fats and waxes.

Castor oil imports declined in 1980 and none was imported from Brazil directly. Imported tonnage was 1 183 in 1980, down 32 per cent. Imports of tung oil and tall oil were also reduced, while mixtures and derivatives of oils, fats and waxes increased to 14 970 tonnes valued at $23.4 million.

Imports of chemically modified oils, fats and waxes increased both in volume and value in 1980, while exports of this group of products declined.

Table 60

CANADIAN IMPORTS OF CASTOR OIL

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Brazil	968	257	843	970	--
Ecuador	--	29	250	--	--
United States	345	1 025	591	751	781
United Kingdom	--	--	--	--	402
TOTAL	1 313	1 311	1 684	1 721	1 183
TOTAL VALUE ($'000)	822	1 343	1 719	1 729	1 546

Source: Statistics Canada, Catalogue No. 65-007

Table 61

CANADIAN IMPORTS OF CHINAWOOD OIL OR TUNG OIL

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Argentina	70	29	160	115	43
Paraguay	381	223	85	14	56
United States	247	433	380	448	427
Other Countries	36	14	55	63	--
TOTAL	734	699	680	640	526
TOTAL VALUE ($'000)	663	1 371	1 662	982	642

Source: Statistics Canada, Catalogue No. 65-007

Table 62

CANADIAN IMPORTS OF TALL OIL, TALL OIL PITCH AND TALL OIL FATTY ACIDS

(Tonnes)

TALL OIL AND TALL OIL PITCH	1976	1977	1978	1979	1980
United States	2 849	757	1 167	1 394	1 135
TALL OIL FATTY ACIDS					
United States	4 806	5 159	4 577	4 753	4 014
Other Countries	15	--	--	--	--
TOTAL	7 670	5 916	5 744	6 147	5 149
TOTAL VALUE ($'000)	2 906	3 252	3 322	3 306	3 210

Source: Statistics Canada, Catalogue No. 65-007

Table 63

CANADIAN IMPORTS OF MIXTURES AND DERIVATIVES

OF OILS, FATS AND WAXES

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Brazil	--	--	45	43	27
Germany, West	116	116	43	76	66
Netherlands	--	--	28	6	177
Norway	118	237	257	180	469
United Kingdom	316	604	3	948	832
United States	12 031	10 555	9 833	13 598	13 397
Other Countries	1	2	2	2	2
TOTAL	12 585	11 516	11 271	14 853	14 970
TOTAL VALUE ($'000)	9 195	10 969	13 746	19 589	23 348

Source: Statistics Canada, Catalogue No. 65-007

Table 64

CANADIAN IMPORTS OF CHEMICALLY MODIFIED OILS,

FATS AND WAXES

(Tonnes)

COUNTRY OF ORIGIN	1976	1977	1978	1979	1980
Brazil	--	40	40	260	59
France	--	--	1	2	3
Germany, West	72	69	79	65	104
India	--	--	--	--	28
Netherlands	214	116	281	270	353
United Kingdom	1 219	53	99	10	122
United States	4 606	5 848	7 363	3 184	3 875
Other Countries	1	3	1	--	1
TOTAL	6 112	6 132	7 865	3 791	4 545
TOTAL VALUE ($'000)	6 084	5 405	8 581	4 810	6 345

Source: Statistics Canada, Catalogue No. 65-007

Table 65

CANADIAN EXPORTS OF CHEMICALLY MODIFIED OILS,

FATS AND WAXES

(Tonnes)

DESTINATION	1976	1977	1978	1979	1980
Australia	--	--	91	61	--
Bahamas	--	--	--	2	--
Barbados	--	--	--	3	3
Bermuda	--	--	1	1	--
Chile	--	--	--	5	--
Hong Kong	--	--	--	--	25
Leeward-Windward Is.	--	1/	--	2	1/
Netherlands-Antilles	--	--	1	--	1/
United Kingdom	--	150	--	2	--
United States	3 008	3 100	4 004	2 877	2 780
USSR	--	508	--	--	--
Venezuela	1	86	48	1	2
Other Countries	2	--	--	--	2
TOTAL	3 012	3 846	4 191	2 954	2 810
TOTAL VALUE ($'000)	663	2 803	1 249	1 265	1 012

1/ Less than one tonne.

Source: Statistics Canada, Catalogue No. 65-004

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